

REMARKS

The present response is responsive to the Examiner's rejections noted in the Final Office Action.

Claims 1 and 24 have been amended. Claim 29 has been canceled without prejudice. Claims 1- 28 remain pending in this application, with claims 25 and 26 withdrawn.

1. Correction of Typographical Errors

Claims 1 and 24 have been amended to correct an obvious typographical error. These claims have been further amended as noted in the arguments present below.

2. Claim Rejections

The Examiner rejected claims 1, 7, 14-16, 24 and 29 under 35 USC 103(a) as being unpatentable over U.S. Patent No. 6,424,498 to Patterson in view of U.S. Patent No. 5,982,584 to Bennin. The Examiner rejected claim 1 under 35 USC 103(a) as being unpatentable over U.S. Patent No. 6,151,197 to Larson in view of Bennin. The Examiner rejected claims 2-6, 8 and 27 under 35 USC 103(a) as being unpatentable over Larson in view of Bennin and further in view of U.S. Patent No. 6,388,843 to Takagi. The Examiner rejected claims 9-13, 21-23 and 28 under 35 USC 103(a) as being unpatentable over Larson in view of Bennin and further in view of U.S. Patent No. 5,986,853 to Simmons. Finally, the Examiner rejected claims 16-20 under 35 USC 103(a) as being unpatentable over Larson in view of Bennin and further in view of U.S. Patent No. 6,014,290 to Suprmamiam. These rejections are respectfully traversed below.

3. Arguments

The Examiner essentially maintained all the rejections noted in the preceding Office Action. Accordingly, Applicant would avoid repeating the arguments previously presented, but incorporates by reference all arguments presented in the prior response to Office Action. Applicant further presents below additional arguments distinguishing the present invention from the applied prior art.

a. Rejection of Independent Claims 1, 24 and 29 Based on Patterson and Bennin

With respect to claims 1 and 24, Patterson is not directed to a suspension in which the flexible member and the load beam of the suspension assembly are configured with a limiter that can be formed after the flexible member has been attached to the load beam. As such, referring to Figs. 3 and 4 in Patterson, it does not provide for the combination of a load beam and suspension structure in which the flexible member is attached to the load beam, and the limiter on the load beam is positioned with respect to the flexible member, to provide a clearance allowing free bending of the limiter through an aperture in the flexible member.

The Examiner pointed out in the Final Office Action that Applicant's previous arguments refer to a process step that is not the object of the claimed structure. It appears that the Examiner was concerned with Applicant's previous comment that the limiter is free to be bent through the aperture in the flexible member after the flexure assembly has been attached to the load beam. It appears that the Examiner did not accord any weight to corresponding limitations in claims 1 and 24.

Claims 1 and 24 as previously presented require that the slider mounting section of the flexure assembly define an aperture that is sized and position with respect to the limiter on the

load beam, "such that the limiter is free to be bent from the first position to the second position and to extend through the aperture after the flexure assembly has been attached to the load beam". Applicant respectfully submits that claims 1 and 24 as previously presented should be accorded weight with respect to such limitations, because such limitations affect the structure of the completed integrated lead suspension. Such limitation do not involve a process step, and further do not rely on any particular sequence of a process, but merely indicate the structure of the relative positions of the aperture (of the slider mounting section of the flexible member) and the limiter (on the load beam). Applicant notes that claims 1 and 24 already recite that "a first section of the flexible member being fixedly attached to the load beam". Accordingly, the recited structure of the relative positions of the aperture and limiter refers to the combination of the flexible member and load beam, as attached to each other. Applicant respectfully submits that such relative positions provide a clearance allowing the limiter to freely move through the aperture, with the flexible member as attached to the load beam, regardless of the particular process steps of attaching the flexible member to the load beam or the bending of the limiter, and in fact regardless of whether the limiter is actually bent. In other words, as long as the aperture is positioned relative to the limiter in the manner recited in claims 1 and 24, there is sufficient clearance to allow the limiter to move through the aperture at any time, with the flexible member as attached to the load beam.

In view of the foregoing clarification, Applicant amended claims 1 and 24 to omit the recitation "after the flexure assembly has been attached to the load beam" to remove any implication of a process step. Further, Applicant amended claims 1 and 24 to recite an integrated lead suspension comprising a flexible member attached to a load beam and "an aperture that is sized and positioned with respect to the limiter to provide a clearance allowing the limiter to

freely move through the aperture such that the limiter is free to be bent from the first position to the second position and to extend through the aperture". As explained above, such recitation merely clarifies the structure of the completed integrated lead suspension, to provided structural definition to the relative positions of the aperture and limiter (i.e., affecting the claimed structure).

As mentioned in Applicant's previous response, with respect to Patterson, the sizes and relative positions of the mounting plates (208, 208) of the gimbals (206, 306), the catch holes (212, 312), and the cutouts (202, 302) for the hooks (204, 304), are such that there is no clearance between any aperture on the gimbals (206, 306) with respect to the hooks (204, 304) on the load beams (200, 300), that would be capable of providing "a clearance allowing the limiter to freely move through the aperture such that the limiter is free to be bent from the first position to the second position and to extend through the aperture", as required by independent claims 1 and 24. In other words, for the Patterson suspension assembly, it had to be pre-bent prior to attaching the flexure assembly to the load beam. Once attached, there is no clearance for the limiter to freely move through the aperture in the flexure assembly. In contradistinction, the present invention allows for free movement of the limiter through the aperture.

Bennin does not make up for the deficiencies of Patterson. Bennin does not disclose any suspension limiter, much less the inventive limiter configuration offered by the flexure assembly and the load beam of the present invention. Accordingly, even if Bennin may somehow be combined with Patterson, the combination does not result in the present invention defined in independent claims 1 and 24.

Accordingly, independent claims 1 and 24, and all the claims dependent therefrom, are patentable over Patterson and Bennin.

Applicant submits that the present amendments should be entered after Final Action. They do not raise any new issue of prior art. The amendments merely clarify the structure of the relative positions of the limiter and aperture, to address the Examiner's concern with respect to process claims. Applicant submits that no new prior art search is required, as the amendments do not expand the scope of the invention as defined by claims 1 and 24 as previously presented. Further, the present amendment present the claims in better form for appeal, should that be necessary. Accordingly, it is not inappropriate for the Examiner to enter the present amendments.

With respect to independent claim 29, as noted in Applicant's previous response, there is no teaching or suggestion (expressed or implied) if and how Patterson could be modified with the Bennin integrated lead suspension assemblies, while maintaining the limiter designs Patterson proposes for its suspension assemblies. However, in the interest of furthering the present application to early allowance, Applicant canceled claim 29 without prejudice.

b. Rejection of Independent Claim 1 based on Larson and Bennin

Applicant respectfully submits that there is no disclosure in Larson or Bennin as to if and how the Larson suspension assembly can and should be modified with integrated leads in the manner suggested only by the Examiner.

Claim 1 recites that the end of the slider mounting section (of the flexible member) interacts with the limiter. The end here refers to the distal end or tip of the slider mounting

section. For example, referring to the embodiment shown in Fig. 4 of the present application, the slider mounting section is along a longitudinal axis of the suspension assembly. Referring also to Fig. 2 of the present application, the slider 40 is mounted on a slider mounting section below the view of the slider, which has an end 60 that interacts with the limiter on the load beam.

In contradistinction, referring to Fig. 6 in Larson, Larson discloses the deployment of limiters 360 that act on the tabs 358 on the sides of the flexures 354, on either side of the slider 400. The mounting section of the slider 400 does not have any end that interacts with any limiter. Instead, the tabs 358 are found on the side rails of the ring-shaped flexure that surrounds the slider mounting section, not on the slider mounting section. Referring also to Fig. 3B in Larson, it is clear that the tabs 358 are not connected to the ends of the slider mounting section, which is found below the slider 400 (obscured from view in Fig. 3B).

Bennin does not make up for the deficiencies of Larson. Bennin does not disclose any suspension limiter, much less the inventive limiter configuration offered by the flexure assembly and the load beam of the present invention. More specifically, Bennin also does not disclose a suspension assembly having the end of the slider mounting section (of the flexible member) interacting with the limiter. Accordingly, even if Bennin may somehow be combined with Larson, the combination does not result in the present invention defined in independent claim 1.

Further, there is no suggestion to combine the teaching of Larson and Bennin in the first place. Larson is not directed to an integrated lead suspension assembly. There is no suggestion in Larson or Bennin, if and how the Larson suspension assembly can and should be modified to include integrated leads. Applicant respectfully submits that with integrated leads, the leads are attached to the surface of a support flexible/suspension member, which also supports the slider. As such, the integrated leads must be routed around the sides of the flexure of the suspension

member (i.e., around the sides of the slider), in order to reach the magnetic recording/write heads at the end of the slider towards the distal end of the suspension assembly. (The magnetic heads are at the end of the slider because of the way the suspension assembly is supported with respect to the rotation of the magnetic disk.) Applicant further submits that the side rails of the flexure are some of the most sensitive part of the flexure/gimbals. They are therefore not the best places to rely on for limiter interactions. The interactions of the side rails of the flexure with the limiters not only could easily damage the performance of the flexure, it could also damage the integrated leads on the side rails of the flexure. In the present invention defined in claim 1, the limiter does not directly interact with the flexure on the sides of the slider, but instead interacts with the end of the slider mounting section that extends into the aperture.

There is therefore no teaching or suggestion (expressed or implied) if and how Larson could be modified with the Bennin integrated lead suspension assemblies, while maintaining the limiter designs Larson propose for its non-integrated lead suspension assemblies. Such modification is only possible with impermissible hindsight reconstructions, made possible only by the disclosure of the present invention.

Accordingly, independent claim 1, and all the claims dependent therefrom, are patentable over Larson in view of Bennin.

c. Rejection of Claims Based on Larson in view of Bennin and Takagi

Claims 2-6, 8 and 27 have been rejected based on Larson in view of Bennin and Takagi.

With respect to claims 2-6 and 8, they are dependent from claim 1. In view of the traversal of the rejection of claim 1 above, these dependent claims should therefore be patentable over Larson and Bennin, and further in view of Takagi.

With respect to claim 27, similar to claim 1, Larson and Bennin in combination do not disclose a suspension assembly having the end of the slider mounting section (of the flexible member) interacting with the limiter. Takagi does not make up for the deficiencies of Larson and Bennin. Like Bennin, Takagi is also directed to a limiter configuration in which limiters are deployed on the sides of the slider support. Accordingly, even if Takagi can somehow be combined with Larson and Bennin, the combination does not result in the present invention defined in claim 27.

d. Rejection Based on Larson in view of Bennin and Simmons

Claims 9-13, 21-23 and 28 have been rejected based on Larson in view of Bennin and Simmons.

With respect to claims 9-13 and 21-23, they are dependent from claim 1. In view of the traversal of the rejection of claim 1 above, these dependent claims should therefore be patentable over Larson and Bennin, and further in view of Simmons.

With respect to claim 28, similar to claim 1, Larson and Bennin in combination do not disclose a suspension assembly having the end of the slider mounting section (of the flexible member) interacting with the limiter. Simmons does not make up for the deficiencies of Larson and Bennin. Like Bennin, Simmons is also directed to a limiter configuration in which limiters are deployed on the sides of the slider support. Accordingly, even if Simmons can somehow be

combined with Larson and Bennin, the combination does not result in the present invention defined in claim 27.

e. Rejection Based on Larson in view of Bennin and Supramaniam

Claims 16-20 have been rejected based on Larson in view of Bennin and Supramaniam.

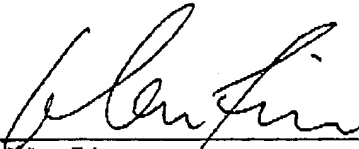
Claims 16-20 are dependent from claim 1. In view of the traversal of the rejection of claim 1 above, these dependent claims should therefore be patentable over Larson and Bennin, and further in view of Supramaniam.

CONCLUSION

In view of all the foregoing, Applicant submits that the claims pending in this application are patentable over the references of record and are in condition for allowance. Such action at an early date is earnestly solicited. **The Examiner is invited to call the undersigned representative to discuss any outstanding issues that may not have been adequately addressed in this response.**

Respectfully submitted,

Dated: February 18, 2004



Wen Liu
Registration No. 32,822

LIU & LIU
811 W. Seventh Street; Suite 1100
Los Angeles, California 90017
Telephone: (213) 830-5743
Facsimile: (213) 830-5741